

# **ABATEMENT/REMEDIATION VERIFICATION**

## ABATEMENT/REMEDICATION VERIFICATION

Cleaning is an important part of the entire lead-based paint remediation process. Proper scheduling of daily and final cleanup will provide the best opportunity for a lead free environment once remediation has been completed.

Daily cleaning of the work area where remediation is taking place is essential to the overall project. Daily cleanup should be scheduled for the same time every day after remediation has ended. Under no circumstances should remediation be proceeding while the daily cleanup is in progress.

The final cleanup process should not begin any sooner than a few hours after remediation has ended. This allows any airborne dust particles to settle prior to cleaning. Unless final cleanup is thorough and complete, large amounts of nearly invisible lead-contaminated dust can become embedded in the new paint and compromise the usefulness of the project.

The suggested method of post-remediation cleanup is a combination of wet and dry cleaning. The wet cleaning method requires the use of an all purpose detergent or a lead-specific cleaning agent to wash all surfaces. This is followed by the dry cleaning method of using a HEPA vacuum to clean all the surfaces within the dwelling. HEPA vacuums differ from conventional vacuums in that they contain high efficiency filters that trap extremely small, micron sized particles. These filters can filter out particles of 0.3 microns or greater at 99.97% efficiency. During final cleanup, all surfaces should be thoroughly and completely washed and HEPA vacuumed. These surfaces include (but are not limited to) ceilings, walls, floors, windows (sash, sill, trough), doors, fixtures of any kind (light, bathroom, kitchen), built in cabinets, and appliances; this includes not only abated surfaces but also unabated surfaces that have been exposed to lead-contaminated dust generated by the remediation process.

All supplies (such as mop heads, sponges and rags) and equipment (such as power and hand tools, generators, and vehicles) should be changed or cleaned on a regular basis. All disposable items should be treated as contaminated debris and removed from the site prior to final clearance testing.

Before a verification or clearance for occupancy can be issued, clearance testing must be done to verify that remediation and final cleanup procedures have reduced the lead poisoning hazard to acceptable levels. The following clearance standards must be met:

- 1) Floor lead dust levels are less than 40 ug/ft<sup>2</sup>;
- 2) Window sill lead dust levels are less than 250 ug/ft<sup>2</sup>;
- 3) Window trough lead dust levels are less than 400 ug/ft<sup>2</sup>;
- 4) Bare soil lead levels are less than 400 ppm in play areas, gardens, pet sleeping areas, and within three feet of the foundation;
- 5) Bare soil lead levels are less than 1,200 ppm in other locations; and
- 6) Drinking water lead levels are less than 15 ppb.

Before a unit is reoccupied after remediation, it should be demonstrated that residual lead dust levels are in compliance with these standards. In the case of exterior remediation, the standard for floors should be applied to porches, decks, walkways and other horizontal surfaces. Therefore areas in and around a dwelling should be sampled to measure the residual lead dust levels. It is also important to ensure that areas outside the containment area were not contaminated during remediation. Therefore, samples should be taken in these areas after remediation to determine if lead levels are acceptable. All lead levels for a dwelling must meet the clearance criteria before it can be reoccupied.

A homeowner or contractor must maintain all records relating to clearance testing. These records should include all results of surface dust testing, as well as air and water testing performed during and after remediation.

All clearance samples must be submitted to an approved laboratory for lead analysis. (see list of labs in appendix). The results must be submitted to the health department to be used to verify compliance with clearance standards. Spot sampling by the environmental health specialist may be performed to verify results reported by private laboratories. Further remediation activities will be required if final inspection or post-remediation samples indicate that health hazards continue to exist.

Upon reoccupancy of an abated property the occupant should be notified of any encapsulated lead-based paint or other potential hazards remaining on the property that may present future problems.

### **Final Clearance**

Upon completion of lead remediation the environmental health specialist is responsible for making a final inspection to assure that lead poisoning hazards have been effectively abated and notifying the owner when the property is cleared for reoccupancy. The final inspection will include a visual inspection and any necessary sampling to assure that work has been completed as specified on the approved remediation plan.

### **Visual Inspection**

A visual inspection must be made to assure complete removal of paint if paint removal is used as an abatement method. This inspection must be completed prior to repainting. Since lead may remain on the wood after paint removal, an XRF should not be used for the final inspection. If component removal and replacement is used, a visual inspection will confirm that the hazardous components have been removed. Enclosures must be inspected to assure that children will not have access to remaining lead. Encapsulants must be evaluated for durability and adherence to the substrate. It should not be possible for children to peel off encapsulant materials. The visual inspection will also verify that all wastes generated during remediation have been removed from the site and that a thorough final cleanup has been completed.

### **Post Remediation Dust Sampling**

Once final cleanup and a visual inspection have been completed, remaining surface dust must be tested to ensure that only very low levels of residual lead-contaminated dust remain. Surface dust sampling should not be conducted if a visual accumulation of dust or debris remains on surfaces. Dust sampling should be deferred until a more thorough final cleanup has been completed.

Since most airborne lead-contaminated dust will settle within a few hours of completing cleanup activities, surface dust sampling should be conducted no sooner than a few hours after completion of final cleanup. This should allow any airborne lead-contaminated dust present to settle onto surfaces to be tested.

The number and location of dust samples necessary to verify effective final cleanup will vary depending on methods used and the extent of the work area. Following are recommended dust sampling for various remediation methods:

- For extensive interior paint removal methods such as heat guns, chemical strippers, scraping or sanding: collect dust samples from a floor, window sill, and window trough in all remediation and surrounding areas.
- For limited areas of interior paint removal: collect dust samples from a floor, a window sill,

and window trough in each remediation area, and one sample from outside the remediation area within 10 feet of the area abated.

- For extensive interior component removal and replacement or encapsulation: collect one dust sample from each remediation and surrounding area and balance the number of samples from floor, window sills, and window troughs. Collect one sample from a non-remediation area within 10 feet of an abated area.

- For extensive exterior paint removal: collect one or more dust samples from horizontal exterior surfaces accessible to children. Also collect one dust sample from each interior area, balancing the number of floor, window sill, and window trough samples.

- For limited replacement or encapsulation of interior components: collect one dust sample from each abated area and balance the number of samples from floor, window sills, and window troughs. Collect one sample from a non-remediation area within 10 feet of an abated area.

- For extensive exterior paint removal: collect one or more dust samples from horizontal exterior surfaces accessible to children. Also collect one dust sample from each interior area, balancing the number of floor, window sill, and window trough samples.

- For limited exterior paint removal: collect one or more dust samples from horizontal exterior surfaces accessible to children. Collect one sample from each interior area within 10 feet of the remediation area, balancing the number of floor, window sill and window trough samples.

- Extensive exterior component removal or encapsulation/enclosure: collect a dust sample from one or more horizontal surface accessible to children.

The number and location of dust samples should be selected to represent the areas most likely to contain lead-contaminated dust as a result of the remediation process. Clearance for reoccupancy must not be given until laboratory results indicate that all areas sampled are below the clearance standards for lead-contaminated dust. Exterior surfaces other than windows must meet the standard for floors.

In addition to dust sampling, clearance testing for lead in soil is necessary for projects involving soil remediation or where the remediation process may have contaminated soil. Soil brought in as fill to cover contaminated soil or soil that may have been contaminated during remediation must be tested and determined to contain less than 400 ppm lead.

#### **Clearance Notice**

After a visual inspection and clearance testing verify that lead poisoning hazards have been abated, a written reoccupancy notice must be sent to the property owner. A sample notification letter is included in the appendix.